comprising carbon in an amount ranging from 0.15 to 0.25% by weight, silicon in an amount of not less than 0.4 % by weight and not more than 1.23 % by weight, nickel in an amount ranging from 1 to 3 % by weight, chromium in an amount ranging from 1.2 to 3.2 % by weight, and molybdenum in an amount ranging from 0.25 to 2.0 % by weight, a total amount of chromium and molybdenum amounting to at least 2.71% by weight, said machine structural steel containing carbide precipitated under a heat treatment for spheroidizing, the carbide having an average particle size of not larger than 1 μm and the maximum particle size of not larger than 3 μm.

4. (Amended) A high bearing pressure-resistant member made of a steel which has a high machinability and is formed of a machine structural steel comprising carbon in an amount ranging from 0.15 to 0.25% by weight, silicon in an amount of not less than 0.4 % by weight and not more than 1.23 % by weight, nickel in an amount ranging from 1 to 3 % by weight, chromium in an amount ranging from 1.2 to 3.2 % by weight, and molybdenum in an amount ranging from 0.25 to 2.0 % by weight, a total amount of chromium and molybdenum amounting to at least 2.71% by weight, said machine structural steel containing carbide precipitated under a heat treatment for spheroidizing, the carbide having an average particle size of not larger than 1 μm and the maximum particle size of not larger than 3 μm,

wherein said machine structural steel undergoes one of a first treatment and a second treatment after the spheroidizing heat treatment, said first treatment including hardening the machine structural steel by carburizing, and tempering the hardened machine structural steel, said second treatment including hardening the machine structural steel by carbonitriding, and tempering the hardened machine structural steel.

5. (Amended) A method of producing a steel for a high bearing

pressure-resistant member, having a high machinability, said method comprising:

preparing a machine structural steel comprising carbon in an amount ranging from 0.15 to 0.25% by weight, silicon in an amount of not less than 0.4 % by weight and not more than 1.23 % by weight, nickel in an amount ranging from 1 to 3 % by weight, chromium in an amount ranging from 1.2 to 3.2 % by weight, and molybdenum in an amount ranging from 0.25 to 2.0 % by weight, a total amount of chromium and molybdenum amounting to at least 2.71% by weight; and

applying a heat treatment for spheroidizing on said machine structural steel so that carbide is precipitated in said machine structural steel, the carbide having an average particle size of not larger than 1 μm and the maximum particle size of not larger than 3 μm.

7. (Amended) A method of producing a high bearing pressure-resistant member, having a high machinability, said method comprising:

preparing a machine structural steel comprising carbon in an amount ranging from 0.15 to 0.25% by weight, silicon in an amount of not less than 0.4 % by weight and not more than 1.23 % by weight, nickel in an amount ranging from 1 to 3 % by weight, chromium in an amount ranging from 1.2 to 3.2 % by weight, and molybdenum in an amount ranging from 0.25 to 2.0 % by weight, a total amount of chromium and molybdenum amounting to at least 2.71% by weight;

applying a heat treatment for spheroidizing on said machine structural steel so that carbide is precipitated in said machine structural steel, the carbide having an average particle size of not larger than 1 μm and the maximum particle size of not larger than 3 μm;

machining said machine structural steel to have predetermined shape and dimensions; and

applying one of a first treatment and a second treatment on said machine

structural steel after the machining, said first treatment including hardening said machine structural steel by carburizing, and tempering said hardened machine structural steel, said second treatment including hardening said machine structural steel by carbonitriding, and tempering said hardened machine structural steel.

Please add the following new claims:

8. A member as claimed in claim 4, wherein the carbide contains at least one carbide selected from the group consisting of MC carbide, M_2C carbide, M_7C_3 carbide, $M_{23}C_6$ carbide, and M_6C carbide.

9. A member as claimed in claim 4, wherein the member comprises a variable transmission member.

10. A member as claimed in claim 4, wherein the member undergoes the first treatment.

11. A member as claimed in claim 4, wherein the member undergoes the second treatment.

12. The method as claimed in claim 5, wherein the spheroidizing heat treatment includes maintaining said machine structural steel at a temperature ranging from 700 to 820 °C.

13. A method as claimed in claim 6, wherein:

the carbide contains at least one carbide selected from the group consisting of MC carbide, M_2C carbide, M_7C_3 carbide, $M_{23}C_6$ carbide, and M_6C carbide; and

said machine structural steel has a Vickers hardness ranging from 180 to 250 after undergoing the spheroidizing heat treatment.

14. A method as claimed in claim 7, wherein the spheroidizing heat treatment comprises maintaining said machine structural steel at a temperature ranging from 700 to 820 °C.

15. A method as claimed in claim 14, wherein the spheroidizing heat treatment further comprises cooling said machine structural steel to a temperature of 600 °C at a cooling rate of not higher than 20 °C per hour.

16. A method as claimed in claim 15, wherein the carbide contains at least one carbide selected from the group consisting of MC carbide, M_2C carbide, M_7C_3 carbide, $M_{23}C_6$ carbide, and M_6C carbide.

17. A method as claimed in claim 7, wherein the member comprises a variable transmission member.

18. A method as claimed in claim 7, wherein the first treatment is applied on said machine structural steel.

19. A method as claimed in claim 7, wherein the second treatment is applied on said machine structural steel.

20. A steel for a high bearing pressure-resistant member, having a high machinability, said steel being formed of a machine structural steel comprising carbon in an amount ranging from 0.15 to 0.25% by weight, silicon in a relatively small amount of not less than 0.4 % by weight, nickel in an amount ranging from 1 to 3 % by weight, chromium in an amount ranging from 1.2 to

3.2 % by weight, and molybdenum in an amount ranging from 0.25 to 2.0 % by weight, said machine structural steel containing carbide precipitated under a heat treatment for spheroidizing, wherein the total amount of chromium and molybdenum and the conditions of spheroidizing heat treatment are selected such that the carbide has an average particle size of not larger than 1 μm and a maximum particle size of not larger than 3 μm.

21. A steel as claimed in claim 20, wherein the total amount of chromium and molybdenum is within a range between 2.71 and 3.46 %.

22. A steel as claimed in claim 1, wherein the total amount of chromium and molybdenum is within a range between 2.71 and 3.46 %.

23. A member as claimed in claim 4, wherein the total amount of chromium and molybdenum is within a range between 2.71 and 3.46 %.

24. A method as claimed in claim 5, wherein the total amount of chromium and molybdenum is within a range between 2.71 and 3.46 %.

25. A method as claimed in claim 7, wherein the total amount of chromium and molybdenum is within a range between 2.71 and 3.46 %.

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